Remarks

In view of the above amendments to the claims and the following discussion, the applicants submit that the claims now pending in the application are not anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Thus, the applicants believe that all of these claims are in allowable form.

REJECTIONS

A. 35 U. S. C. § 102

1. Claims 1, 3-8 and 11-14 are not anticipated by Sharp et al.

Claims 1, 3-8 and 11-14 stand rejected under 35 U. S. C. § 102(e) as being anticipated by Sharp et al. (U. S. Patent 7,083,282 issued August 1, 2006). The applicants submit that these claims are not anticipated by this reference.

Independent claims 1 and 6 relate to a polarized light source (*see*, the specification at page 2, lines 3-4). The light source includes a lamp 10, an integrator 20 and a wire grid polarizer 30 (*see*, FIG. 1 and the specification at page 2, line 20 to page 3, line 15). The lamp 10 provides randomly polarized light 2 which is directed along an axis of the integrator 20 (*see*, FIG. 1 and the specification at page 3, lines 1-2). The wire-grid polarizer 30 is disposed at a first end of the integrator 20 and transmits light of a first polarization 2' while reflecting light of a second polarization 4 back to the lamp 10 (*see*, FIG. 1 and the specification at page 3, lines 12-21). The lamp 10 rotates the polarization and reflects the light such that the reflected light 6 is directed back to the integrator and transmitted through the wire-grid polarizer (*see*, FIG. 1 and the specification at page 3, lines 21-25).

In claims 1 and 6, the inventors have incorporated a lamp which not only produces randomly polarized light, but a lamp which can rotate the polarization of reflected light and reflect the properly polarized light back to the integrator. Applicant asserts that the lamp is chosen and configured with respect to the integrator and polarizer such that "the total recycled light 6' is equal to the cumulative light of the desired polarization that passes through the polarizer 30 throughout this recycling process." (*see*, FIG. 1 and the specification at page 4, lines 1-5). This total recovery of recycled light is possible because of the architecture of applicant's novel system as recited in the independent and dependent claims.

Sharp et al. describes a recycling light source (*see*, Sharp et al. at column 1, lines 12-14). The recycling light source includes a lamp 202, a filter 204, a focusing lens 208, a light pipe 212, an apertured reflector 210 located at one end of the light pipe 212 and a reflective polarizer 214 (*see,* Sharp et al. at FIG. 2 and column 2, line 62 to column 3, line 14). Light from the lamp 202 is filtered and focused before being provided to the light pipe 212 through the apertured reflector 210 (*see,* Sharp et al. at FIG. 2 and column 2, line 62 to column 3, line 3). The light pipe 212 distributes the light and provides it to the reflective polarizer 214 (*see,* Sharp et al. at FIG. 2 and column 3, lines 11-13). Light transmitted through the reflective polarizer 214 is output to a lens 216 or recycled back to the apertured reflector 210 (*see,* Sharp et al. at FIG. 2 and column 3, lines 17-19).

Sharp et al. does not describe or suggest a polarized light source including a lamp, an integrator and a wire grid polarizer in which the wire-grid polarizer disposed at a first end of the integrator transmits light of a first polarization while reflecting light of a second polarization back to the lamp such that the lamp rotates the polarization and reflects the light such that the reflected light is directed back to the integrator and transmitted through the wire-grid polarizer. Rather, Sharp et al. teaches a different arrangement in which light from a lamp is filtered and focused before being provided to a light pipe through an apertured reflector wherein the light pipe distributes the light and provides it to a

reflective polarizer where such light is either output to a lens or recycled back to the apertured reflector. Since, Sharp et al. does not describe or suggest a polarized light source including a lamp, an integrator and a wire grid polarizer in which the wire-grid polarizer disposed at a first end of the integrator transmits light of a first polarization while reflecting light of a second polarization back to the lamp such that the lamp rotates the polarization and reflects the light such that the reflected light is directed back to the integrator and transmitted through the wire-grid polarizer, claims 1 and 6 are patentable over Sharp et al.

Claims 3-5, 7-8 and 11-14 depend directly or indirectly from claims 1 and 6, respectively. For the same reasons as stated above for claims 1 and 6, claims 3-5, 7-8 and 11-14 are also patentable over Sharp et al.

B. 35 U. S. C. § 103

1. Claims 2 and 10 are not unpatentable over Sharp et al. in view of O'Conner et al.

Claims 2 and 10 stand rejected under 35 U. S. C. § 103(a) as being unpatentable over Sharp et al. (U. S. Patent 7,083,282 issued August 1, 2006) in view of O'Conner et al. (U. S. Patent 6,811,272 issued November 2, 2004). The applicants submit that these claims are not rendered obvious by the combination of these references.

Claims 2 and 10 depend from claims 1 and 6, respectively and relate to a polarized light source (*see*, the specification at page 2, lines 3-4). The light source includes a lamp 10, an integrator 20 and a wire grid polarizer 30 (*see*, FIG. 1 and the specification at page 2, line 20 to page 3, line 15). The lamp 10 provides randomly polarized light 2 which is directed along an axis of the integrator 20 (*see*, FIG. 1 and the specification at page 3, lines 1-2). The wire-grid polarizer 30 is disposed at a first end of the integrator 20 and transmits light of a first polarization 2' while reflecting light of a second polarization 4 back to the

lamp 10 (*see*, FIG. 1 and the specification at page 3, lines 12-21). The lamp 10 rotates the polarization and reflects the light such that the reflected light 6 is directed back to the integrator and transmitted through the wire-grid polarizer (*see*, FIG. 1 and the specification at page 3, lines 21-25).

In claims 2 and 10, the inventors have incorporated a lamp which not only produces randomly polarized light, but a lamp which can rotate the polarization of reflected light and reflect the properly polarized light back to the integrator. Applicant asserts that the lamp is chosen and configured with respect to the integrator and polarizer such that "the total recycled light 6' is equal to the cumulative light of the desired polarization that passes through the polarizer 30 throughout this recycling process." (*see*, FIG. 1 and the specification at page 4, lines 1-5). This total recovery of recycled light is possible because of the architecture of applicant's novel system as recited in the independent and dependent claims.

Sharp et al. describes a recycling light source (*see*, Sharp et al. at column 1, lines 12-14). The recycling light source includes a lamp 202, a filter 204, a focusing lens 208, a light pipe 212, an apertured reflector 210 located at one end of the light pipe 212 and a reflective polarizer 214 (*see,* Sharp et al. at FIG. 2 and column 2, line 62 to column 3, line 14). Light from the lamp 202 is filtered and focused before being provided to the light pipe 212 through the apertured reflector 210 (*see,* Sharp et al. at FIG. 2 and column 2, line 62 to column 3, line 3). The light pipe 212 distributes the light and provides it to the reflective polarizer 214 (*see,* Sharp et al. at FIG. 2 and column 3, lines 11-13). Light transmitted through the reflective polarizer 214 is output to a lens 216 or recycled back to the apertured reflector 210 (*see,* Sharp et al. at FIG. 2 and column 3, lines 17-19).

Sharp et al. does not describe or suggest a polarized light source including a lamp, an integrator and a wire grid polarizer in which the wire-grid polarizer disposed at a first end of the integrator transmits light of a first polarization while reflecting light of a second polarization back to the lamp such that the lamp rotates the polarization and reflects the light such that the reflected

light is directed back to the integrator and transmitted through the wire-grid polarizer. Rather, Sharp et al. teaches a different arrangement in which light from a lamp is filtered and focused before being provided to a light pipe through an apertured reflector wherein the light pipe distributes the light and provides it to a reflective polarizer where such light is either output to a lens or recycled back to the apertured reflector. Since, Sharp et al. does not describe or suggest a polarized light source including a lamp, an integrator and a wire grid polarizer in which the wire-grid polarizer disposed at a first end of the integrator transmits light of a first polarization while reflecting light of a second polarization back to the lamp such that the lamp rotates the polarization and reflects the light such that the reflected light is directed back to the integrator and transmitted through the wire-grid polarizer, claims 2 and 10 are patentable over Sharp et al.

O'Conner et al. describes a polarization conversion system (*see,* O'Conner et al. at column 1, lines 39-40). The polarization system includes a light source 12, a reflector 14 with a phase retarder 26 thereon and linear polarizer 18 (*see,* O'Conner et al. at FIG. 2 and column 2, lines 20-22). The linear polarizer reflects wrong polarization light and transmits correct polarization light (*see,* O'Conner et al. at FIG. 2 and column 1, lines 61-66). The phase retarder converts the wrong polarization light into correct polarization light which is then transmitted to the polarizer (*see,* O'Conner et al. at FIG. 2 and column 1, line 66 to column 3, line 8). Unless ideal components are utilized, there will be losses as the light beams traverse the system (*see,* O'Conner et al. at column 2, lines 9-10).

O'Conner et al. does not describe or suggest a polarized light source including a lamp, an integrator and a wire grid polarizer in which the wire-grid polarizer disposed at a first end of the integrator transmits light of a first polarization while reflecting light of a second polarization back to the lamp such that the lamp rotates the polarization and reflects the light such that the reflected

light is directed back to the integrator and transmitted through the wire-grid polarizer. Rather, O'Conner et al. only describes a polarization conversion system including a light source, a reflector with a phase retarder thereon and a linear polarizer wherein the linear polarizer reflects wrong polarization light and transmits correct polarization light and the phase retarder converts the wrong polarization light into correct polarization light which is then transmitted to the polarizer. Since, O'Conner et al. does not describe or suggest a polarized light source including a lamp, an integrator and a wire grid polarizer in which the wire-grid polarizer disposed at a first end of the integrator transmits light of a first polarization while reflecting light of a second polarization back to the lamp such that the lamp rotates the polarization and reflects the light such that the reflected light is directed back to the integrator and transmitted through the wire-grid polarizer, claims 2 and 10 are patentable over O'Conner et al.

Furthermore, since Sharp et al. only teaches an arrangement in which light from a lamp is filtered and focused before being provided to a light pipe through an apertured reflector wherein the light pipe distributes the light and provides it to a reflective polarizer where such light is either output to a lens or recycled back to the apertured reflector and O'Conner et al. only describes a polarization conversion system including a light source, a reflector with a phase retarder thereon and a linear polarizer wherein the linear polarizer reflects wrong polarization light and transmits correct polarization light and the phase retarder converts the wrong polarization light into correct polarization light which is then transmitted to the polarizer, the combination of these references does not describe or suggest applicants arrangement. In particular, claims 2 and 10 recite a polarized light source including a lamp, an integrator and a wire grid polarizer in which the wire-grid polarizer disposed at a first end of the integrator transmits light of a first polarization while reflecting light of a second polarization back to the lamp such that the lamp rotates the polarization and reflects the light such that the reflected light is directed back to the integrator and transmitted through

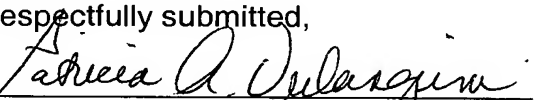
the wire-grid polarizer. Thus, claims 2 and 10 are patentable over the combination of these references.

CONCLUSION

Thus, the applicants submit that none of the claims, presently in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Consequently, the applicants believe that all of the claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring continuation of the adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Ms. Patricia A. Verlangieri, at (609) 734-6867, so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



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